# General

## Guideline Title

Guideline for sterile technique.

## Bibliographic Source(s)

Van Wicklin SA, Conner R. Guideline for sterile technique. In: 2015 guidelines for perioperative practice. Denver (CO): Association of periOperative Registered Nurses (AORN); 2012 Dec. p. 67-96. [135 references]

## Guideline Status

This is the current release of the guideline.

# Recommendations

## Major Recommendations

Note from the Association of periOperative Nurses (AORN): Although these recommendations include several references to surgical attire (including surgical masks) and hand hygiene, the focus of the recommendations is on sterile technique. Surgical attire and hand hygiene are outside the scope of these recommendations. The reader should refer to the AORN "Recommended practices for surgical attire" and "Recommended practices for hand hygiene in the perioperative setting" for additional guidance.

I. Perioperative personnel should implement practices that reduce the spread of transmissible infections when preparing or working in the operating room or invasive procedure room and when performing or assisting with operative or other invasive procedures.
II. Surgical gowns, gloves, and drape products for use in the perioperative setting should be evaluated and selected for safety, efficacy, and cost before purchase or use.
III. Perioperative personnel should use sterile technique when donning and wearing sterile gowns and gloves.
IV. Sterile drapes should be used to establish a sterile field.
V. A sterile field should be prepared for patients undergoing surgical or other invasive procedures.
VI. Items introduced to the sterile field should be opened, dispensed, and transferred by methods that maintain the sterility and integrity of the item and the sterile field.
VII. Sterile fields should be constantly monitored.
VIII. All personnel moving within or around a sterile field should do so in a manner that prevents contamination of the sterile field.
IX. Perioperative team members should receive initial and ongoing education and competency validation on their understanding of the principles of and performance of the processes for sterile technique.
X. Nursing activities related to sterile technique should be documented in a manner consistent with health care organization policies and procedures and regulatory and accrediting agency requirements.

XI. Policies and procedures for the implementation of sterile technique should be developed, reviewed periodically, revised as necessary, and readily available in the practice setting.
XII. Perioperative personnel should participate in a variety of quality assurance and performance improvement activities that are consistent with the health care organization's plan to improve understanding of and compliance with the principles and processes of sterile technique.

### Clinical Algorithm(s)

None provided

## Scope

### Disease/Condition(s)

Any condition requiring the use of surgical and other invasive procedure–related care

### Guideline Category

Prevention

### Clinical Specialty

Nursing

Preventive Medicine

Surgery

### Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

### Guideline Objective(s)

To provide guidance for establishing and maintaining a sterile field by following the principles and implementing the processes of sterile technique

Note: Surgical attire and hand hygiene are outside the scope of these recommendations.

### Target Population

- Patients undergoing surgical and other invasive procedures
- Perioperative healthcare personnel

### Interventions and Practices Considered

1. Implementation of practices that reduce the spread of transmissible infections (preparing or working in the operating room/invasive procedure room or performing/assisting with operative/invasive procedures)

2. Evaluation and selection of surgical gowns, gloves, and drape products based on safety, efficacy, and cost
3. Sterile technique for donning and wearing sterile gowns and gloves
4. Establishment of a sterile field using sterile drapes
5. Opening, dispensing and transferring of items introduced into the sterile field by methods that maintain the sterility and integrity of the item and the sterile field
6. Monitoring of the sterile field
7. Movement of personnel within or around the sterile field in a manner that prevents contamination of the sterile field
8. Education and competency validation of perioperative team members on principles and performance of the processes for sterile technique
9. Documentation of nursing activities related to sterile technique
10. Development, review and revision of policies and procedures for the implementation of sterile technique
11. Participation of perioperative personnel in a quality assurance and performance improvement activities

## Major Outcomes Considered

- Signs and symptoms of systemic, surgical site and/or wound infection
- Risk of microbial contamination
- Safety and efficacy of sterile technique interventions and protocols
- Risk of infection transmission to patients and/or health care workers

# Methodology

## Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

## Description of Methods Used to Collect/Select the Evidence

Evidence Review

A medical librarian conducted a systematic review of MEDLINE®, CINAHL®, Scopus®, and the Cochrane Database of Systematic Reviews for meta-analyses, randomized and nonrandomized trials and studies, systematic and nonsystematic reviews, and opinion documents and letters. Search terms included sterile field, sterile technique, aseptic technique, aseptic practices, surgical drapes, double-gloving, assisted gloving, closed gloving, time-related sterilization, event-related sterilization, surgical attire, protective clothing, sterile supplies, sterile barriers, barrier precautions, body-exhaust suits, space suits, laminar air flow, bowel technique, (glove expansion and fluids), (glove perforation and electrosurgery), strikethrough, Spaulding's criteria, product packaging, and equipment contamination.

The lead author and medical librarian identified and obtained relevant guidelines from government agencies, other professional organizations, and standards-setting bodies. The lead author assessed additional professional literature, including some that initially appeared in other articles provided to the author.

The initial search was confined to 2006 to 2011, but the time restriction was not considered in subsequent searches. The librarian also established continuing alerts on the topics included in this recommended practice and provided relevant results to the lead author.

## Number of Source Documents

A total of 135 articles met the inclusion criteria and were included in the review.

## Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Not Given)

## Rating Scheme for the Strength of the Evidence

Not stated

## Methods Used to Analyze the Evidence

Systematic Review

## Description of the Methods Used to Analyze the Evidence

Articles identified by the search were provided to the project team for evaluation. The team consisted of the lead author, two members of the Recommended Practices Advisory Board, and a member of the Research Committee. The lead author divided the search results into topics and assigned members of the team to review and critically appraise each article using the Johns Hopkins Evidence-Based Practice Model and the Research or Non-Research Evidence Appraisal Tools as appropriate. The literature was independently evaluated and appraised according to the strength and quality of the evidence. Each article was then assigned an appraisal score as agreed upon by consensus of the team. The appraisal score is noted in brackets after each reference, as applicable (see the original guideline document).

## Methods Used to Formulate the Recommendations

Expert Consensus

## Description of Methods Used to Formulate the Recommendations

The collective evidence supporting each intervention within a specific recommendation was summarized and used to rate the strength of the evidence using the Oncology Nursing Society Putting Evidence into Practice (ONS PEP®) schema. Factors considered in review of the collective evidence were the quality of research, quantity of similar studies on a given topic, and consistency of results supporting a recommendation. The evidence rating is noted in brackets after each intervention in the original guideline document.

## Rating Scheme for the Strength of the Recommendations

1: Strong Evidence: Interventions or activities for which effectiveness has been demonstrated by strong evidence from rigorously-designed studies, meta-analyses, or systematic reviews, rigorously-developed clinical practice guidelines, or regulatory requirements.

- Evidence from a meta-analysis or systematic review of research studies that incorporated evidence appraisal and synthesis of the evidence in the analysis.
- Supportive evidence from a single well-conducted randomized controlled trial.
- Guidelines that are developed by a panel of experts, that derive from an explicit literature search methodology, and include evidence appraisal and synthesis of the evidence.

1: Regulatory Requirement: Federal law or regulation.

2: Moderate Evidence: Interventions or activities for which the evidence is less well established than for those listed under "Strong Evidence."

- Supportive evidence from a well-conducted research study.
- Guidelines developed by a panel of experts which are primarily based on the evidence but not supported by evidence appraisal and synthesis of the evidence.
- Non-research evidence with consistent results and fairly definitive conclusions.

3: Limited Evidence: Interventions or activities for which there is currently insufficient evidence or evidence of inadequate quality.

- Supportive evidence from a poorly conducted research study.
- Evidence from non-experimental studies with high potential for bias.
- Guidelines developed largely by consensus or expert opinion.
- Non-research evidence with insufficient evidence or inconsistent results.
- Conflicting evidence, but where the preponderance of the evidence supports the recommendation.

4: Benefits Balanced With Harms: Selected interventions or activities for which the Association of periOperative Registered Nurses (AORN) Recommended Practices Advisory Board (RPAB) is of the opinion that the desirable effects of following this recommendation outweigh the harms.

5: No Evidence: Interventions or activities for which no supportive evidence was found during the literature search completed for the recommendation.

- Consensus opinion

### Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

### Method of Guideline Validation

External Peer Review

Internal Peer Review

### Description of Method of Guideline Validation

Recommended Practices for Sterile Technique have been approved by the Association of periOperative Registered Nurses (AORN) Recommended Practices Advisory Board. They were presented as proposed recommendations for comments by members and others. They are effective December 15, 2012.

## Evidence Supporting the Recommendations

### Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field). See the full guideline document for systematic review and discussion of evidence.

## Benefits/Harms of Implementing the Guideline Recommendations

### Potential Benefits

Prevention of patient and health care worker injury

### Potential Harms

Not stated

## Qualifying Statements

### Qualifying Statements

- These recommended practices represent the Association's official position on questions regarding optimal perioperative nursing practice.
- No attempt has been made to gain consensus among users, manufacturers, and consumers of any material or product.
- Compliance with the Association of periOperative Registered Nurses (AORN) recommended practices is voluntary.
- AORN's recommended practices are intended as achievable and represent what is believed to be an optimal level of patient care within surgical and invasive procedure settings.
- Although they are considered to represent the optimal level of practice, variations in practice settings and clinical situations may limit the degree to which each recommendation can be implemented.

## Implementation of the Guideline

### Description of Implementation Strategy

An implementation strategy was not provided.

### Implementation Tools

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

## Institute of Medicine (IOM) National Healthcare Quality Report Categories

### IOM Care Need

Staying Healthy

### IOM Domain

Safety

## Identifying Information and Availability

### Bibliographic Source(s)

Van Wicklin SA, Conner R. Guideline for sterile technique. In: 2015 guidelines for perioperative practice. Denver (CO): Association of periOperative Registered Nurses (AORN); 2012 Dec. p. 67-96. [135 references]

### Adaptation

Not applicable: The guideline was not adapted from another source.

### Date Released

2012 Dec

## Guideline Developer(s)

Association of periOperative Registered Nurses - Professional Association

## Source(s) of Funding

Association of periOperative Registered Nurses (AORN)

## Guideline Committee

Association of periOperative Registered Nurses (AORN) Recommended Practices Advisory Board

## Composition of Group That Authored the Guideline

*Lead Author*: Sharon A. Van Wicklin, MSN, RN, CNOR, CRNFA, CPSN, PLNC

*Contributing Author*: Ramona Conner, MSN, RN, CNOR

*Team Members*: Antonia B. Hughes, MA, BSN, RN, CNOR; Paula J. Morton, MS, RN, CNOR; Christine Anderson, PhD, RN; Annette Wasielewski, BSN, RN, CNOR

## Financial Disclosures/Conflicts of Interest

No financial relationships relevant to the content of this guideline have been disclosed by the authors, planners, peer reviewers, or staff.

## Guideline Status

This is the current release of the guideline.

## Guideline Availability

Electronic copies: Not available at this time.

Print copies: Available from the Association of periOperative Registered Nurses (AORN) Web site .

## Availability of Companion Documents

The following is available:

- Recommended Practices for Sterile Technique. Webinar. Available from the Association of periOperative Nurses (AORN) Web site .

## Patient Resources

None available

## NGC Status

This NGC summary was completed by ECRI Institute on April 16, 2013. The information was verified by the guideline developer on May 21, 2013.

## Copyright Statement

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions.

# Disclaimer

## NGC Disclaimer

The National Guideline Clearinghouseâ„¢ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion-criteria.aspx.

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.